

Tests on 276 crosses

284.

1. Biotin + phage-resistance segregation:

Y411 x Plate 5. T-1
 Y24.
 mT(0).
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20.

5 R
 15 S.

8 suspected
 B- in large tubes

	T-1	T(0)	T(B)
1	R	-	-
2	S	-	+
3	R	-	+
4	S	-	+
5	S	-	+
6	S	-	+
7	S	+	+
8	?	-	-

Prototroph
 not coli

∴ 4 B- out of 32 attempts.
 This is not a random segregation.
 284-1 + 284-3 may be original
 mutants. See infra for determination

strike out + test for biotin.

m Biotin	Plate 4	T-1	T(0)	T(B)	T-1	T(0)	T(B)
21					+		
22					+		
23					+		
24.					+		
25					+		
26					+		
27					+		
28					+		
29					+		
30	Plate 3				+		
31					+		
32					+		
33					+		
34					+		
35					+		
36					+		
37					+		
38					+		
39					+		
40.					+		
41					+		
42					+		
43					+		
44					+		
45					+		

17 total

5 R
 12 S.

10.

+

15 total.

1 L

of 21 prototrophic clones

↓ 11 resistant, 5 sensitive

+ Yeast? contamination

Biochemical ecotypes.

285.

Plates Tubes

	$T(B_1)$	$T(\phi)$	$T(B, \phi)$	
1	+	+	+	+
2	+	+	+	-
3	+	+	+	+
4	+	-	+	+
5	+	+	+	-
6	+	-	+	+
7	+	+	+	-
8	+	+	+	-
9	+	+	+	+
10	+	+	+	+
11	+	+	+	+
12	+	+	+	+
13	+	+	+	+
14	+	+	+	+
15	+	+	+	+

This is very suspicious.
There should not be so
many prototrophs per
original plating data.

B_1 -

	B	$B T$	T	
21	-	+	+	T^-
22	-	+	+	T^-
23	-	+	-	$B^- T^- ?$
24	-	+	-	$B^- T^- ?$
25	+	+	-	$B^- T^- ?$
26	-	+	-	$B^- T^- ?$
27	-	+	-	$B^- T^- ?$
28	+	+	-	$B^- T^- ?$
29	+	+	-	$B^- T^- ?$
30	-	+	+	T^-
31	$B\phi$	+	$B\phi T = +$	ϕ^-
32	-	+	+	$\phi^- T^- ?$
33	-	+	+	ϕ^-
34	-	+	+	ϕ^-
35	-	+	+	ϕ^-
36	-	+	+	ϕ^-
37	-	+	+	ϕ^-
38	-	+	+	ϕ^-
39	-	+	+	ϕ^-
40	-	+	+	ϕ^-

check surface

check surface

32. Large tubes ϕ - T ϕT ++ but came up late on T.
streak out & test isolates.

	B	T	$B T$
23	-	+	+
24	-	-	+
26	-	+	+
27	-	-	+
29	-	-	+

↓
4 isolates behaved similarly
 ϕ is just a min. or $T^- \rightarrow T^+$
very readily in this strain
Drop it!

286. Filtrate -
transformation.

286

N 25. Broz YB \approx 58-161.

Filtr Y41 culture in YB 1 from 283). Dil ca 1:3 \approx YB. O.

1. Broz \approx 1 ml 58-161. Sh. 30° 1P25.

2. Broz YB \approx 1 ml 58-161; 1 ml Y41 (culture above).

Plate 1P27. ca 200

Broz YB \approx Y41 p25. Filter 1P27 + es above 1.
Broz 58 1C1 1P27

Plate in T(0) 7P28.

O.

7/26/46.

YB medium 1 ml each. Sh. 30° P26-N28 Plate in T(0).

3. Y10+Y24

10.

4. Y41+Y24

300

5. Y41+161

100

6. Y41+Y43 O. (K-12 + B/r)

48 horns. But not quite optimal numbers.

Sex - conditions

July 28. 1946

- 7P28. More is a drop of mixture. 8h. 30°
 - 1130 A 29.

		Growth	Colony (1/10 ml)
1.	Y24 + Y41 T(Ba)	++	36
2.	do. YB	+Y	6
3.	Y24 + Y10 T(Ba) **	++	0
4.	YB	+Y	150 ~

B⁻M+TLS. Y40 + 679-680. YB + V 33 Study segregation / 11
 B⁻P⁻ 6. Y40 + Y45 YB + V 0
 TLB. 7 58-183X + YB + H 30
 Y10

8 679-680 (to get — in O in T in L 0 0 10
 ~ 680)

Plate 0.1 ml = 1-7 into T(0). 8 into O, L, T.
 Save water suspensions.

YB is OK but not entirely consistent from one culture to another

EG Y40+Y45 Should be repeated.

strike out 679+680 and use thereafter as Y47.

Y9; Y44.

289

7/28/46

Test Y9 on:

	MV	++	+++	24h.
MV-yha	++	+++		
M ₁ yha	-	-		
V	±	+++		
M	-	-		

Methionine may
be muchly stimulatory
as ~~perphse~~ suggests it is
in wild type.

Evidently Methionine + some vitamin may be needed. (choline??)

Try series $\bar{\epsilon}$ v.t. left out.

TLM + V₁ ts. 12h.

1.	-	B ₁	+	
2.	-	B ₂	+	
3.	pab		-	
4.	niacin		+	
5.	folie		+	
6.	B ₆		+	
7.	niacin		+	
8.	pant		+	
9.	niac.		+	
10.	biotin		+	
11.	+V+yha		+	
12.	TLM+yha		-	

This is a pab-less, this, which is
not completely replaced by ~~pab~~
methionine + yha. Compare Y44.

Y44: 8^{1/2} 28²

H¹
H + 100^r pab
(stude
filled).

24h. 36h.

+ 10v + ++

Linkage of Virus-Resistance.

290.

8 PM. 7/28/46.

Plate 1 ml 287-4 into			(Sized in 1/2 vials in cold)				
			Down o. $\frac{1}{6}$ Look for				
1.	O	30, 25, 26	Average: 27				
2	B	28, 33, 30	30	3	.1	R	
3	Ø	38	37	10	.3	R	
4	C	35 29	29	2	.1	R	
5	P	150, 136.	143	116	4.0	S	
6	T	50 52	51.	24.	1.0	S	

Summary one might think: T^- unlinked
 P^- linked either to B, Ø, or C.

B, Ø, C also linked to each other. Need other data.
 Analyze phage linkages. Test for resistance
 to $T-10^+$ + test biochemical b.g. of those ind.

	# tested	# resist	Fraction:	Calc R in <u>constant</u> .		
1.	O	27	2	.075		
2	B	23	5	.22	>0	Check R. $\frac{2B^-}{3B^+}$
3	Ø	30	0	.00	0	
4	C	15	0	.00	0	
M.	P	43	32	.75	.98	Check S. ✓ $8P^- 2P^+$
6	T	26	8	.31.	.5	Check S, R. ✓
						5 T-S
						4 T-R,
						10 P+ P- S
						1 T+ R,

Proteus mutants.

290.

7/29/46.

M28 more 50 ml colis = D3, D14. Sh. 30°.

Irradiate each 1, 2, 5 mins in u-v quartz tube.

More 1 ml into colis sh 30°; 1 ml into spot to count.

A. D3	1 min	<u>Surv.</u>	++
	2 min	10^3	
	5 min	10	

B D14	1 min	<u>Surv.</u>	+++
	2 min	10^5	
	5 min.		

Use D3 1 min. D14 2 min.

Ezyt Pour detector plates in T(CN) at 10^{-8} dilution 6 P 30.
Mc

D3 - 12 x 40 = ca 500 colonies. 1 small colony.

D14 - 12 x 9 = ca 100 colonies 1 small colony.

Plates contain. do not pick.

7/30/46.

Going over old stocks, select all available which tested + or minimal (for parent) but which were picked from small colonies.
Determine inheritance of this characteristic.

A. 58-series. P29. Broth and colic \times stock. Sh. 30°

1. 172-1	nq	
2 172-25	nq	
3 172-13		
4 172-32	nq	
11. 6303	*	> col.
12 6321		large + small colonies on T(0).
13 6325		1/500 sm. colony on layering.
14 6323	[>]	" colonies on T(0). Do not ^{no rung on layering} repeat.]
15 6319	nq	
16 58	*	
17 6320	0	Numerous colonies appeared 10 P.I.
18 6329	nq	

* Plated too heavily

Δ Layer. 3 P.I.

auxanograph.

30.III.1946

1 degree. Y6 sl. 30° TP 30.

Wash and plate:

Use 1 cc v 1-7
• 12cc elsewhere.

Calc. type/cc 22a ~~B.C.~~

1.	O	46, 47, 64.	52	* 23	BΦT	12	17
2.	B	70, 66	16	* 24	BΦL	13	33
3.	Φ	49, 61.	3	25	BΦB, ^{v. many small.}	14	-
4.	C	22+, 31+,		26	BC T	11	
5.	T	{, 28+32=60	8	27	BC L	10	
6.	L	{, 44+44=88.	36	28	BCB,	13	
7.	B, {, 94+70: 164		112	* 29	BT L	73[41]	302.
*8.	BΦ	9	4	* 30	BTB,	39	52
9.	BC	7	0	31	BB,	41	-
10.	BT	6	0	32	ΦCT	5	
11.	BL	12	0	33	ΦCL	5	
12.	BB,	19	0	34	ΦCB,	14	
13.	ΦC	5	0	* 35	ΦTL	56+ ^{mm}	158.
14.	ΦT	3	0	<u>20-</u>	ΦTB,	20	-
15.	ΦL	10	0	37	ΦLB,	43	-
*	16.	ΦB,	23	104	38	CTL	39
	17.	CT	11 (+)	0	39	CTB,	30
	18.	CL	10	0	40	BΦTL	56.
	19.	CB,	12	0	41	BΦTB,	28
*phag.	20.	TL	35 +	196	42	BΦLB,	53
*ph.	21.	TB,	22.	82	43	BC TL	60. [24].
*ph.	22.	LB,	46	350	44	BC TB,	28
					45	BC LB,	41
					46	ΦCTL	23 (^{incl 67})
					47	ΦCTB,	26
					48	ΦCLB,	41

680 - mutants.

294.

August 1, 1946

Irradiate 36 hr. culture of 679⁺-680 u.v. quartz tube, 2 mm. 1P1
dose 1 ml into coliss. (YB)

N 2. Detection plates.

Pick 8 colonies:

	T(0)	HC	V
1	+		
2	+		
3	+		
4	+		
5	+		
6	-	+	+
7	+		
8	+		

August 1, 1946

Received, possibly contam., A 31 & titres ca. 10^9 .

Dose 1 ml ea. + 1 ml K-12 culture into YB flasks. 1 h. 30° 1130 P 31-

Centrifuge off cells + sterile filter.

Plaque out T7 + T3 in K-12 and on B/r deriv. at dil. 10^{-4} , 10^{-7} .

AI. T-3, T-7 clear; others turbid (secondary growth?)

Filter T-3, T-7.

Repeat with others. n.g.

Plate T3, T7 of above \bar{c} nutrients for resistance.

T3 Y40 $\frac{5}{2}$ do many resist.
Y41 good lysis in most of plate
 $\frac{161}{10}$. N.G.
T7. not mixed well: no lyses?
" " ; lysis; resistance is incom.
do.

Culture phages \bar{c} B/r. A 2. + K12 in liquid.

	3 1/2 h:	K-12	B.
Filter	T2	+	+
Filter	T3	+	-
	4	+	T?
	5	+	T
	6	F	-
	7	T	-

High titres developed,
but activity seems to be lost
after filtration exc. T2 which leaves
no resists. T6 could not be
developed. Titres of other phages not consistent

Redunbg T7 on K-12.

Dose K, B \bar{c} culture
1 P2.

296

Tests on 290 - Virus R-linkage

See 290. August 1, 1946.

A. from 290-2. (on B) test 5 R.

	$T(0)$
1	+
2	+
3	+
4	-
5	

B. From 290-5 (on P). test 20 S.

	$T(0)$
1	-
2	- ✓
3	+
4	-
5	-
6	-
7	-
8	-
9	+
10	-
11	+
12	+
13	+
14	+
15	+
16	+
17	-
18	-
19	-
20	-

OK

C. From 290-6 (on T) Test 10.

	$T(0)$	$T-1$	Check:
1	+	S	7 +
2	+	R	8
3	+	S	9 ✓
4	+	S	13 ✓
5	+	S	$T-S$
6	+	S	
7	+	S	
8	-	S	
9	-	S	$T-S$
10	-	R	15?
OK.			

$T(0)$	$T-1$		
11	-		
12	+		
13	-		
14	-		
15	-		
16	-		
17	+		
18	+		
19	+		
20.	+		
		$T-R$	5
		S	4
		R	10
		S	1

1. Phage resistance from o plates.	T-1.	25/35 succ.
2. do. B plates.		6/20
3. do. L plates		6/10
4. do. B ₁ plates		? smeared.
5. B ₁ φ [Exp. 1:20].		
6. B ₁ φ [Exp. 2:3]	2++	1 B. ⁻
7. T-1 on TL, TB ₁ , LB ₁		
8. B B ₁ φ T [Exp. 1:6]	4++	3 T-
9. B ₁ φ L [Exp. 1:3]	5++	(1BL) = 207-9. R ₁ .
10 B TL [Exp. 1:2]		
11. B TB ₁ [Exp. 1:6]	3++	4 T -
12. φ TL [Exp. 1:3].	4 T-L-	2 T- 1 L-

Phage analysis: 297.

Bioch. T-1

1.	T-	R
2	T-	R
3	T-	S*
4	T-L-	R
5	T-L-	R
6	T-L-	R
7	T-L-	R
8	T-	R
9	T-	S*
10	L-	R.

Rechecks biochemical reg.

297

8, 12.

6 T-	B-	✓
25	B-	S*
HR.	B-L-	✓
14.	T-	S*

?	297-9.
---	--------

297-6, 11.

T-S	3
R	4

8 AUG 1946

Spread ca. 10^4 bacteria on surface of glass plates.

Irradiate 0-120 sec. under lamp. @ 17 cm.

Check on amt. lost to spreader.

pre 30°

 $0'$
 $0'$ $0/100$,
 $0/100$,
 0

0, resuspended after 3 hr. incubation.

time:

5
10
20
30
40
50
60
80
100
120

Plates smeared + contaminated.

Repeat: 2 P. 9. Cover most plates for dry colonies. Use 2% agar base. 58-161.

Use complete culture 10^{-4} . 1 ml1. 10^{-6} . 1 ml 75.
residue on smearing rod: 0

$$\frac{2}{75} = 2.7\% / 5 \text{ sec.}$$

2. 0 $\frac{10^{-4}}{7500}$. 1 ml +++ (countable ≈ 7500)

$$\frac{10}{7500} = .0013. / 10 \text{ sec.}$$

3. 1 sec. ++

4. 2 sec. ++

5. 5 sec. ca 200.

6. 10 sec. ca 10. (some may have been shielded by edge of plate).

6 sec is diff. to control. Use 10 secs. and a higher conc. back.

$$(.027)^2 = .0007$$

Proteus mutants

299

August 8, 1946.

Irradiate 1.5 mins. in quartz tube.

P3, D121. Drop 5 ml into 80 ml coli SS. 11P8.

Detection plates 2AII. in T/cyst; mi

Picks 1203, 10014.

all grow on P(0) = [T + mi + cyst]

$\gamma_{10} \times \gamma_{10}/_1$; ~~$\gamma_{24}/_1 \times \gamma_{10}$~~ .

~~2900~~
300.

8 AUG 1968

P8 mox. YB.

SP9 plate into 0, etc. .5 ml

A	O	28	{ 28.	$10/29 R_1 = .34$
$\gamma_{10}/_1 \times$	O	26		
γ_{24}	O	30		
	BT	30	9+	T 1
	BL	8T.		
	BB,	ca 100 82	9+	B, 1
	DT	ca 100 34	8+	Φ 3
	DL	16 T.	3+	
	Φ B,	ca 100 85.	9+	B, 1

B	O	35		
$\gamma_{10} \times$	O	15		
$\gamma_{24}/_1$	O	27		
	BT	56	7+	
	BL	5?	3+	
	BB,	ca 100.	(BL) T 2	(300 - 1)
	DT	36		
	DL	29	2+	
	Φ B,	ca 100.		

Sample colonies + test for ecotypes.

Associated Mutations
Reversion.

300

August 10, 1946.

P10. Inc 50 ml colic σ E 671-~~880~~ 30°.

P11 Wash & inc 5 ml into T(0) + NEAA + Its +
Plate 1 ml into T(0), T(lc) T(hu) ^{EAA -}
a) leucine
b) threonine.

Plates: L. 22
T: 4
O: 0

Recotypes.

August 15, 1946.

Mo2 YB P12 plate M14. 3 seconds.

1. $Y_2 Y \times Y_{10/1}$
2. $Y_2 Y \times Y_{10}$
3. $Y_2 Y \times G7F-183$
4. $Y_1 Y \times G79-680$.

$$29/49 = \frac{29}{49} = 59\%$$

- 301-1 "B, ϕ " - gear on B₁.
 2 BB.
 3, BB₁. ✓✓
 4 B,C gear on C.
 5 " "
 6 BB₁ ✓✓

301-1-3.

15	1. B ϕ TB ₁	+ 6	ϕ B ₁ , 6	(B ϕ 1) (BB ₂)	2. Minnow "
15	2 CL	+ 14	1 C (301-6)		:
15	3. CB ₁	+ 5	B, 8	(B,C) 2.	301-4,5
3	4. ϕ L	+ 3			
5	5. ϕ TL	+ 4	T _R , 1		
7	6. BT _L	+ 6	T 1	3. O B _L P B _L P B _L P	
15	7. BB ₁ , ϕ	+ 5	B, 9	(BB ₁) 1 (301-6)	
13	8 B, ϕ T	+ 4	B, 9.	4. O B _L P B _L P B _L P	
13	9. BB ₁ , L	+ 8	L 2 B, 2 B, L 1		
3	10 BB ₁ , T	B ₁ , 1	B 1 + 1		
15	11 B ϕ T	+ 10	B 3 B ϕ 2		
15	12 B ϕ L	+ 10	L 2 ϕ 1		
12	13. B ϕ B ₁ , L	+ 8	B, L 2 B ₁ B, 1		
	Collect B ₁ and test for R ₁ .	+ 2/19	more resistant!! from $Y_2 Y \times Y_{10/1}$! $\chi^2 = ca 2$.		

Collect + and examine for heterogeneity. Select a + which appears to be ratio but has, app., a resistance component. : 301-7.

These ratios mean little.

See 305

Compare w/ wilds
on plates where
each mutant could run up

Summary	86	B ₁	T	L	B	ϕ	C	B, L	B ₁	B ϕ
ratio to wild	1.	1	.06	.07	.09	.02	.05	.2	.1	.05
corrected + on av. plates	146	37	31	55	56	52	19	16	28	41

Strains:

K-12	L15	6522	B/2	Proteus
58	679	*148-334	Y1	B11 (Orenes)
58-161	✓ 679-680	532-171	Y2	B D3
58-278*	679-680A	209-301	Y3	T D14.
58-309	679-183	✓ 15L-171	Y4	R
58-336	679-440	558-228	Y5	C
58-580*	679-662	* 572-228	Y6	<i>C-phage</i>
58-593*	679-680	1250-228		
58-610*	679-680-Y9*	823-304.		
58-741	679-680-Y10*			
58-2651				
3214				
3232		* 66-489 lys.		
3356		* 15L-171 lys.		
4899*		* 18-15L-171-meth.		
5030				
5255				
5273				
5298				
5417*				
5450				
5580				
5631				
5636*				
58				<i>Shigella paratyphiiae</i>
6049				<i>Schizophyllum commune vesiculosum</i>
6177				<i>Anamycetes albidans</i>
Y17				<i>Endomyces fibuliger</i>
Y12				<i>Schizophyllum pombe</i> (Wicksell)
Y15				<i>S. pombe</i> (Spiegelman).
Y16				<i>Allotrichos feraleis</i> - Yaloff cat. 35 <i>daubozia aenigma</i> - Yaloff cat. 12. protot.

* strains which adapt readily
" do not

15 Aug.

- dose 2 drops Y40 into 5 ml YB contg: 2P15 30°
a 50 u/ml - 11P15, N16 - filaments; "zygospores" common.
b 100 More or less inhibited.
c 150 Strongly inhibited.
d. 200 " penicillin".

Repeat:-

10P21.

1. Penicillins 2500 u./50ml. + 1ml mor. Y10/1. Sh. 30°

4P22. Filaments + beaded ~~—~~ rods. V. rare "zygosp.".

4P21. dose 1 ml Y10/1 into YB 50 ml Sh. 30°

Salmonella storkes.

303

August 20, 1946.

Received from P+S diagnostic labs. to pest slnts
12 b: EN NW EV ENV

24 hour readings:

	R	E	N	O
-V	-	-	-	-
1	+	-	+	+
2	+	+	+	+
3	+	±	+	+
4	+	±	+	+
5	+	+	+	+
6	+	+	+	+
7	+	+	+	+
8	+	+	+	+
9	+	+	+	+
10	+	+	+	+
11	+	+	+	+

para A
cholera suis
cholera suis.

methionine, tryptophane
++ on EAA; ~~aspartate, glutamate~~
methionine

S. pullorum Stokes - see infra. as above in analysis

Cross strain *Salmonella* pullorum, and S/S/H $\in T_1, T_3, \dots$

10PM. 8/26/46.

Sh. 30° YB. 1 ml inc.

① Y24/1 x Y10

② Y24/1 x Y10/1 No colonies!!

③ Y24/1 x 679-68C

④ Y24 x Y10 20/20 succ.

Plate 5 P 28. (1/2 ml.) containing P30.

①

1	0	52
2	0	51
3	B,	211
4	B,	142 (142 but small)

5 BΦ TB,

6 BΦ LB, very crowded.

7 BΦ TL

8 BC LB, very crowded

9 BC TL turbid.

10 BC ~~TB~~ —

11 φ CTB, Too turbid. —

12 φ CTL too turbid —

13 φ CLB, too turbid ✓

③
359371 Test EO isolates
423 on T(0). Keep inc.
subculture for v.78 ++
2 ?
Check. ++

304-3A

- 3B

lysine contains too much B, B, etc. evidently.

304.

Y2Y1 x Y10

data:

Plates. Colony types:

B ϕ TB, 15 + 6 ϕ 5 B, 2 B ϕ R 1B! 1B?

B ϕ LB, none taken

B ϕ TL 20 + 4 ϕ 1 B ϕ R 1? \circlearrowleft 1? B ϕ L \circlearrowleft 1? B ϕ T \circlearrowleft ϕ L? B ϕ ?

BCTB, 5 + 3 B, 1 B, B? 1 B, TR \circlearrowleft R. \therefore ecotype.

+ 27/37 R. 8/9 R.B., 10/10 R ϕ

1 mixed (304-1) See 305

40+ 1 B
10 ϕ 3 B ϕ R
9 B, 1 B, T
(8 B, R; 1 B, S)

~~1 B ϕ , 1~~

304-1. streak out + test:

10/10 S!!

ϕ L: app. OK but checks in detail. same growth on ϕ alone!

30 AUG 1943

P30 - streak out and test colonies for T1-resistance.

1/15 resistant ① → 20/20 R.

1 shows lysis + colonies in zone of streak. (2) → 1/10 R. (streak out.)
= 26.

a. streak out ① + ②

Test with reg. of several types.

1.	①	++
2.	②	++
3.	S	++
4.	S	++
5.	S	++
6.	S.	++

2' = resistant component of 2. (lacks 1 - slow on - C?) ++

a: test ① + ② colonies for resistance:

Compare 304-1.

2b. all resistant.

∴ 301-7 is evidently a mixture of R + S, 1/10 colonies from which was also contaminated.

Salmonella pullorum
leuцинозависим.

305

10 SEP 1945

48 hours 512 cm YB. Broth tube eq. vis:

- | | |
|---------|-------------|
| 1. T(0) | no colonies |
| 2. T(6) | not turbid! |

Later found needs cystine

September 4, 1946, ff.

The 6 \times 2 combinations of B, B₁, T, L are available.

Streak out on NSA plates and inoculate colonies into 5% and YB. Go to CC slants for virus to confirm growth factor requirements. Grow with excess T1, T3 in NSA plates for virus-resistant mutants.

<u>Sources:</u>	<u>Nut. Reg.</u>	<u>Virus:</u>	-
Mut. "TL" 679-680		S, S ₃	Y30
Recomb? "TB," 304. n.g. T-		R, S ₃	Y31
Recomb "BL" 300-1.	✓	R, S ₃	Y32
Recomb "BT" 285-24	✓	S, S ₃	Y33
"BB," 301-2	✓	S, S ₃	Y34
Rev."LB," 3045.		S, S ₃	Y35

Use vacant Y numbers.

BB,
11 R
13 M

BT
11 S
13 M

BL
11 R, S.

TL
11 M
13 M

LB,
11 R
13 R

Stocks ready
stocks need
more need

8 SEP 1946

Recd. from Roepke & Langers:

- α 15L-171 lys According to covering letter, α : 5 single colony isolations
 β 18-15L-171 meth. "a single colony culture of α contains a few cells which require methionine.
(r) 66-489 lys. β : 1 isolation away from α .

Test α and β on:

1A8. lys meth lys+meth. O

6P. α	{ +++	-	+++	
1A10 α	{ ++	++	+++	-
6R. β	{ -	-	-	
	{ +	+	+++	-

8 SEP 1946

Dorothy 36 hr. Y10 into

colonies (48 hr.)

1. O -
2. B, -
3. T. 1-(cont?) - taken out + test)
4. L -
- 5 B, T -
- 6 B, L --
- 7 TL. -

no survivors! (viability?)